

Holocene Sea Level Recorded by Beach Rocks at Ionian Coasts of Apulia (Italy)

Summary

Beach rocks are located along many coasts of the Mediterranean basin. The early diagenesis environment and the mean sea level along the shoreline make these landforms useful in the reconstruction of relative sea-level changes and, in particular, as SLIPs (sea-level index points). The beach rocks surveyed along the Ionian coast of Apulia were found to be well preserved at three specific

depth ranges: 6–9 m, 3–4 m, and from the foreshore to about 1.20 m. Morpho-bathymetric and dive surveys were performed to assess both the geometries and the extension of the submerged beach rocks. Samples were collected at these different depths in the localities of Lido Torretta, Campomarino di Maruggio, San Pietro in Bevagna, and Porto Cesareo. Bivalve shells were identified and isolated from the beach rock samples collected at a depth of 7 m; AMS dating provided a calibrated age of about 7.8 ka BP. Their morphology and petrological features, along with the time constraints, enabled us to (i) reconstruct the local sea-level curve during the Holocene, (ii) corroborate acquired knowledge of the relative sea-level history, and (iii) identify possible local vertical land movement (VLM).



Beach rocks outcrop discontinuously from Taranto (NW) to Capo Santa Maria di Leuca (SE) at (A) Lido Torretta–Torre Sgarrata; (B) from Torre Ovo, Campomarino di Maruggio, and San Pietro in Bevagna; (C) from Porto Cesareo and Torre Squillace; (D) at Lido Conchiglie and Gallipoli; and (E) from Isola Pазze and Ugento; the area studied by MBES can be observed in the dashed box.

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